

## Survey on Corrosion Mitigation Practices

March 2018

### Summary of Responses

	Yes	No	NR
1. Are you specifying corrosion resistant materials on your winter maintenance fleet and/or attachments such as aluminum or stainless steel dump beds or sanders?	25	0	0
2. Are you specifying corrosion resistant coatings on your winter maintenance fleet and/or attachments such as epoxies or other paint systems?	12	11	2
3. Do you utilize other preventative measures on your winter maintenance fleet and/or attachments such as dielectric greases, special enclosures for electric connections, sacrificial anodes, etc.?	20	3	2
4. Do you have dedicated programs for rehabilitation or replacement of corroded elements of your winter maintenance fleet and/or attachments?	11	13	1
5. Do you have a program or policies that specify frequent equipment washing?	15	7	3
6. Do you use Neutralizers, spray-on corrosion inhibitors, or other similar products?	20	3	2
7. Are there any other corrosion related programs or products you have implemented?	11	8	6

Number of States responding: 26 States responded. However, maintenance in Wisconsin is performed by counties and fleet practices are under the counties purview.

## Survey Responses by State

		<b><i>1. Are you specifying corrosion resistant materials on your winter maintenance fleet and/or attachments such as aluminum or stainless steel dump beds or sanders?</i></b>
AK- Alaska		
AL-Alabama		
AR-Arkansas		
AZ- Arizona	Mark Trennepohl	YES
CA-California		
CO-Colorado		
CT-Connecticut	John DeCastro	ConnDOT currently using Cor Ten weathering steel for dump bodies , All V box spreaders are purchased in stainless
DE-Delaware		
FL-Florida		
GA-Georgia		
HI-Hawaii		
IA-Iowa		
ID-Idaho	Jeff Rados Nestor Fernandez Dennis Jensen	All future truck orders are spec'd with SS beds.
IL-Illinois	Frank Sharpe	We utilize stainless steel in our spreaders and have some of our fleet equipped with stainless steel, slide-in dump bodies that we have had great longevity with (they fit right into the traditional dump bed). These units were costly up front, but has saved us so much over the past 5 years that we have more funds for additional trucks.
IN-Indiana		
KS-Kansas		
KY-Kentucky	Rick Durham	we procure Stainless Steel Hoppers and Spreaders
LA-Louisiana		
MA-Massachusetts	Paul Brown	Stainless Steel
MD-Maryland	Tim Lawler	Yes.
ME-Maine	Brian Burnie	Yes – stainless bodies
MI-Michigan	Melissa Longworth Scott Ratterree	Yes. We use all stainless components, dump bodies, slide-in spreaders, Dump V-Box Spreader bodies, cross-augers, etc.

**1. Are you specifying corrosion resistant materials on your winter maintenance fleet and/or attachments such as aluminum or stainless steel dump beds or sanders?**

MN-Minnesota	Todd Stevens	Yes, we use stainless steel dump bodies and sanders; use galvanized steel for some other features such as tool boxes and cab shields; recently switched to aluminum wheel rims.
MO-Missouri		
MS-Mississippi		
MT-Montana	Tony Strainer	Yes. We order stainless steel dump bodies and sanders.
NC-North Carolina		
ND-North Dakota	Larry Gangl	North Dakota used stainless steel dump bodies on all our plow trucks
NE-Nebraska		
NH-New Hampshire	Caleb Dobbins William Dusavitch	NHDOT specs stainless steel spreaders. We also spec stainless steel in "trouble" areas within the dump bodies (corner posts, aprons, etc.) and have transitioned to a cross-memberless body, stainless steel fuel tanks, etc.
NJ-New Jersey		
NM-New Mexico		
NV-Nevada	Wayne Miller	NDOT specifies Stainless Steel for dump beds, sander bodies and frames, and hydraulic valve enclosures.
NY-New York	Mike Lashmet	Stainless Steel dump bodies.
OH-Ohio	Scott Lucas Doug Burke	Yes, we use stainless steel on our beds, hoppers and spreaders. We are specifying stainless or aluminum fuel tanks, air tanks, etc with stainless or aluminum strapping.
OK-Oklahoma		
OR-Oregon	Bruce Erickson	SS Spreaders in our approved solid salt application areas. And looking at SS beds in the near future.
PA-Pennsylvania		
RI-Rhode Island		
SC-South Carolina		
SD-South Dakota	Daniel Varilek	last 5 years South Dakota spec'd out all stainless dump boxes and sanders
TN-Tennessee	Ken Hampton	We have specified AR450 for the main structure of our dump beds. We are also using stainless steel for corner post and long seals and Domex for bracing and top rails of the bed.
TX-Texas	Brian Dodge	Yes, stainless steel spreaders.
UT-Utah	Ryan Ferrin	We specify stainless steel dump beds, we also mount our hydraulics upright behind the cab instead of on the frame rail. We also specify a stainless steel material spreader.

**1. Are you specifying corrosion resistant materials on your winter maintenance fleet and/or attachments such as aluminum or stainless steel dump beds or sanders?**

VA-Virginia	Allen Williams	Yes. VDOT specifies stainless steel dump beds, toolboxes, hydraulic tanks, and chemical spreaders (sanders). VDOT also specifies aluminum fuel tanks.
VT-Vermont	Robert Sylvester	Yes some, Aluminum Tarp arms. Some Stainless hardware in steel Dump bodies. Brine pump cabinet is stainless steel. Some of our smaller dump bodies are stainless steel. Oil Pans are stainless.
WA-Washington	Greg Hanson James Morin	Yes, we are using stainless steel hoppers
WI-Wisconsin	James Hughes	Winter service is performed by Counties
WV-West Virginia	Jeff Pifer	Yes.
WY-Wyoming		

	<b>Respondent</b>	<b>2. Are you specifying corrosion resistant coatings on your winter maintenance fleet and/or attachments such as epoxies or other paint systems?</b>
AK- Alaska		
AL-Alabama		
AR-Arkansas		
AZ- Arizona	Mark Trennepohl	YES
CA-California		
CO-Colorado		
CT-Connecticut	John DeCastro	ConnDOT currently specifies two part epoxy paint on all bodies and plow gear
DE-Delaware		
FL-Florida		
GA-Georgia		
HI-Hawaii		
IA-Iowa		
ID-Idaho	Jeff Rados Nestor Fernandez Dennis Jensen	We are looking into having the frame and components sprayed at a factory level with a vanish product called "Spray-On."
IL-Illinois	Frank Sharpe	No specific corrosion resistant coating is specified beyond typical painting requirements. Consideration is being given to the truck chassis as this is our most common corrosion problem.
IN-Indiana		
KS-Kansas		
KY-Kentucky	Rick Durham	All frame and chassis fabrication, under cab, and under dump body shall be rustproofed with corrosion preventive compound meeting MIL-C-62218 specifications. Material shall be equal to Ziebart Tuflex.
LA-Louisiana		
MA-Massachusetts	Paul Brown	Not specifically specified
MD-Maryland	Tim Lawler	We have a section in our specifications that addresses particular materials and methodologies for painting and powder coating.
ME-Maine	Brian Burnie	I believe we are using some sort of powder coating on the frame.
MI-Michigan	Melissa Longworth Scott Ratterree	Yes. We are applying PPG Amercoat 240 base and PSX700 topcoat to all of our Winter Maintenance Truck frames. Both are two-part epoxy coatings.

**2. Are you specifying corrosion resistant coatings on your winter maintenance fleet and/or attachments such as epoxies or other paint systems?**

MN-Minnesota	Todd Stevens	No, generally; currently doing a pilot project on a small number of plows, with Armor Shield applied to the right side of a truck and no supplemental coating on the left side.
MO-Missouri		
MS-Mississippi		
MT-Montana	Tony Strainer	No
NC-North Carolina		
ND-North Dakota	Larry Gangl	No Response
NE-Nebraska		
NH-New Hampshire	Caleb Dobbins William Dusavitch	Yes, the following is included in the body spec: To ensure proper adhesion and a durable finish of final coating applied by department personnel, body manufacturer shall first clean ALL surfaces of oils, greases and scale by COMMERCIAL ABRASIVE BLAST CLEANING (SSPC-SP-6), then apply TWO (2) coats of Rust-Oleum (NO substitutes) Heavy Duty Gray Primer #HS9381 OR TWO (2) coats of Dupont industrial coatings 2.1PR high solids epoxy mastic primer (formally If-71 125P) to a minimum thickness of FIVE (5) Mils.
NJ-New Jersey		
NM-New Mexico		
NV-Nevada	Wayne Miller	On replacement truck frames, NDOT uses silicone sealer to seal the two halves of each frame rail together to prevent corrosion between the frame rails. We have also used a poly-urethane coating for the outside of the frame rails on the AWD sander trucks in the mountain regions of the Sierra passes. This is a huge problem in any truck older than fifteen years old.
NY-New York	Mike Lashmet	no
OH-Ohio	Scott Lucas Doug Burke	Anywhere we use a coating we either paint with PPG AUE-280 paint or dolphin undercoating.
OK-Oklahoma		
OR-Oregon	Bruce Erickson	Not at this time but are hoping a research project gets funded that will focus on sacrificial coatings to protect equipment.
PA-Pennsylvania		

**2. Are you specifying corrosion resistant coatings on your winter maintenance fleet and/or attachments such as epoxies or other paint systems?**

RI-Rhode Island		
SC-South Carolina		
SD-South Dakota	Daniel Varilek	No Response
TN-Tennessee	Ken Hampton	We specify primer- zinc/epoxy type that is to be certified for a minimum of 3000 hours in an SAE B-117 salt spray test. Top coat shall be certified for 1000 hours for the same test.
TX-Texas	Brian Dodge	No
UT-Utah	Ryan Ferrin	No
VA-Virginia	Allen Williams	No. VDOT has tested such coatings, but we do not specify them to bidders.
VT-Vermont	Robert Sylvester	Bed liner coating is applied under dump body, Nitride or chrome Hydraulic Cylinder rods. Bodies are blasted and are Zinc Primed, Then a coating of Epoxy Primer including inside rear corner posts. Baked at primer stage. Then Painted with Dupont Imron at a min 8 ML thickness.
WA-Washington	Greg Hanson James Morin	No
WI-Wisconsin	James Hughes	Winter service is performed by Counties
WV-West Virginia	Jeff Pifer	No.
WY-Wyoming		

	<b>Respondent</b>	<b>3. Do you utilize other preventative measures on your winter maintenance fleet and/or attachments such as dielectric greases, special enclosures for electric connections, sacrificial anodes, etc.?</b>
AK- Alaska		
AL-Alabama		
AR-Arkansas		
AZ- Arizona	Mark Trennepohl	YES
CA-California		
CO-Colorado		
CT-Connecticut	John DeCastro	ConnDOT has set in place procedures for ongoing maintenance as preventative measures to fight corrosion. Use of Dielectric grease , Fluid Film and other corrosion resistant coatings are used on all winter maintenance equipment. Any equipment that cannot be mounted in cab interior is mounted in weather proof enclosure.
DE-Delaware		
FL-Florida		
GA-Georgia		
HI-Hawaii		
IA-Iowa		
ID-Idaho	Jeff Rados Nestor Fernandez Dennis Jensen	All equipment is spec'd with dielectric grease and is used as a standard a standard practice.
IL-Illinois	Frank Sharpe	No special treatments for electrical connections or hydraulic lines, but we do try to place the hubs of these connections in places that are more protected and less prone to salty splash accumulation.
IN-Indiana		
KS-Kansas		
KY-Kentucky	Rick Durham	Sealed Electrical Connectors and Dielectric Grease
LA-Louisiana		
MA-Massachusetts	Paul Brown	Yes, several steps once a piece comes in to shop when received and then in subsequent maintenances.
MD-Maryland	Tim Lawler	No
ME-Maine	Brian Burnie	Yes – Fluid Film
MI-Michigan	Melissa Longworth Scott Ratterree	Yes. We use dielectric grease in many electrical connections along with Betts dry boxes that have the electrical connections sealed with a clear top sealant after wiring is complete.



**3. Do you utilize other preventative measures on your winter maintenance fleet and/or attachments such as dielectric greases, special enclosures for electric connections, sacrificial anodes, etc.?**

MN-Minnesota	Todd Stevens	Yes, we use custom wiring harnesses that reduce splicing; use weather-resistant enclosures for connections in some situations; one district tried an electrical charging system called Counteract, but did not get good results.
MO-Missouri		
MS-Mississippi		
MT-Montana	Tony Strainer	No
NC-North Carolina		
ND-North Dakota	Larry Gangl	No Response
NE-Nebraska		
NH-New Hampshire	Caleb Dobbins William Dusavitch	NHDOT utilizes dielectric greases and attempt to have all wiring "home runs". We also attempt to place all electric controllers in the cab except for the ECM & Transmission control modules.
NJ-New Jersey		
NM-New Mexico		
NV-Nevada	Wayne Miller	NDOT specifies weather resistant electrical enclosures and Weather Pac brand connectors for all outside the cab electrical connections.
NY-New York	Mike Lashmet	Yes we do use a dielectric grease on our equipment. We use weatherproof connections and wrap more critical plugs with a vinyl wrap or tape to assist in the protection.
OH-Ohio	Scott Lucas Doug Burke	We use dielectric grease and require that most of our electrical wiring be continuous run with 280 series Metripack connectors. We also have a yearly G-inspection for checking and regreasing all out electrical connections.
OK-Oklahoma		
OR-Oregon	Bruce Erickson	Yes, dielectric greases and special enclosures for external electric connections.
PA-Pennsylvania		
RI-Rhode Island		
SC-South Carolina		
SD-South Dakota	Daniel Varilek	No Response
TN-Tennessee	Ken Hampton	We use dielectric grease and we specify no splices within wiring harnesses.
TX-Texas	Brian Dodge	Yes, encouraged via service advisories and best practices.
UT-Utah	Ryan Ferrin	We use dielectric grease to all electrical connections, we spec continuous runs of wire in a sealed loom and weather tight electrical boxes

**3. Do you utilize other preventative measures on your winter maintenance fleet and/or attachments such as dielectric greases, special enclosures for electric connections, sacrificial anodes, etc.?**

VA-Virginia	Allen Williams	Yes. VDOT always looks for and utilizes preventative measures on our winter maintenance fleet. Weather pack connectors and dielectric grease are used. Also, heat shrink tubing and connectors are regularly used.
VT-Vermont	Robert Sylvester	Dielectric on all electrical connections, Some experimental use of Salt neutralizers and Fluid film applications on frames, air valves excreta. Hydraulic valve is located behind cab in an enclosure to keep salt and water out.
WA-Washington	Greg Hanson James Morin	Yes
WI-Wisconsin	James Hughes	Winter service is performed by Counties
WV-West Virginia	Jeff Pifer	Yes.
WY-Wyoming		

	<b>Respondent</b>	<b>4. Do you have dedicated programs for rehabilitation or replacement of corroded elements of your winter maintenance fleet and/or attachments?</b>
AK- Alaska		
AL-Alabama		
AR-Arkansas		
AZ- Arizona	Mark Trennepohl	YES
CA-California		
CO-Colorado		
CT-Connecticut	John DeCastro	ConnDOT will put into service this June a complete facility to sandblast and paint to be able to manage the work internally.
DE-Delaware		
FL-Florida		
GA-Georgia		
HI-Hawaii		
IA-Iowa		
ID-Idaho	Jeff Rados Nestor Fernandez Dennis Jensen	We replace as needed.
IL-Illinois	Frank Sharpe	No dedicated program, we just replace parts if they fail.
IN-Indiana		
KS-Kansas		
KY-Kentucky	Rick Durham	Modified Replacement Schedule
LA-Louisiana		
MA-Massachusetts	Paul Brown	No dedicated
MD-Maryland	Tim Lawler	We inspect our equipment semi-annually, part of that inspection is to review any outstanding maintenance needs including corrosion repair
ME-Maine	Brian Burnie	We refurbish our plows and headgear periodically (sandblasting and painting)
MI-Michigan	Melissa Longworth Scott Ratterree	Yes, repainting efforts, reuse of components, and undercoating of trucks are a few of the ongoing efforts. Also there is a pilot effort to inspect, treat, and reseal connectors on WMTs as part of preventive maintenance schedule.
MN-Minnesota	Todd Stevens	No, no dedicated program; complete an inspect/repair process on all equipment in the off-season.
MO-Missouri		
MS-Mississippi		

**4. Do you have dedicated programs for rehabilitation or replacement of corroded elements of your winter maintenance fleet and/or attachments?**

MT-Montana	Tony Strainer	No
NC-North Carolina		
ND-North Dakota	Larry Gangl	No Response
NE-Nebraska		
NH-New Hampshire	Caleb Dobbins William Dusavitch	No- NHDOT rebuilds bodies and perform rust repairs as a last resort.
NJ-New Jersey		
NM-New Mexico		
NV-Nevada	Wayne Miller	Just an as needed replacement.
NY-New York	Mike Lashmet	All equipment goes through a preventive maintenance (PM) program every few months. Any and all issues found will be address. If the issue can be fix it will be or if replacement is needed it will be replaced.
OH-Ohio	Scott Lucas Doug Burke	We do offer a refurb program of equipment (trucks and components) that are in need of repair. We are also refurbing stainless components at the end of the first trucks life and rolling them into new trucks to see a second life.
OK-Oklahoma		
OR-Oregon	Bruce Erickson	Not at this time.
PA-Pennsylvania		
RI-Rhode Island		
SC-South Carlonia		
SD-South Dakota	Daniel Varilek	The older trucks that showed heavy corrosion were stripped down and sand blasted then treated with a polymer inhibitor to slow the corrosion then repainted. This has given us 4-5 extra years
TN-Tennessee	Ken Hampton	no
TX-Texas	Brian Dodge	No
UT-Utah	Ryan Ferrin	We use a Condition Assessment Program to evaluate corrosion related failures in our off season
VA-Virginia	Allen Williams	No. Corroded components are replaced as needed, but there are no dedicated programs.

**4. Do you have dedicated programs for rehabilitation or replacement of corroded elements of your winter maintenance fleet and/or attachments?**

VT-Vermont	Robert Sylvester	PM Program includes Replacement of Excessively corroded air valves, Springs, Air cans, Dump body gate Cyl. Excreta yearly depending on level of corrosion. Dump bodies are Repaired, sand blasted and painted when needed. Note: With the Implementation of our Paint specs some trucks are making it through there life cycle of 8 years not needing paint or repairs.) Loaders and equipment is blasted and painted at least once in the life of the equipment with epoxy primer and 8Mls Paint thickness min.
WA-Washington	Greg Hanson James Morin	Yes trucks are inspected annually and repaired as appropriate. We have dedicated mechanics that repair items and failures happen
WI-Wisconsin	James Hughes	Winter service is performed by Counties
WV-West Virginia	Jeff Pifer	Yes.
WY-Wyoming		

	<b>Respondent</b>	<b>5. Do you have a program or policies that specify frequent equipment washing?</b>
AK- Alaska		
AL-Alabama		
AR-Arkansas		
AZ- Arizona	Mark Trennepohl	KINDA
CA-California		
CO-Colorado		
CT-Connecticut	John DeCastro	Policy is all vehicle must be rinsed and washed after each storm
DE-Delaware		
FL-Florida		
GA-Georgia		
HI-Hawaii		
IA-Iowa		
ID-Idaho	Jeff Rados Nestor Fernandez Dennis Jensen	Yes
IL-Illinois	Frank Sharpe	Our washing policy is to wash the vehicles at the end of a storm event with pressure washer and an underbody sprayer.
IN-Indiana		
KS-Kansas		
KY-Kentucky	Rick Durham	No Response
LA-Louisiana		
MA-Massachusetts	Paul Brown	Yes, we balance environmental impact. Rinse outside and wash inside with oil water separators.
MD-Maryland	Tim Lawler	At this time we do not.
ME-Maine	Brian Burnie	Yes – We expect trucks to be washed after every storm.
MI-Michigan	Melissa Longworth Scott Ratterree	Yes for Winter Maintenance Trucks. Further detail can be provided as need be.
MN-Minnesota	Todd Stevens	Yes, we have written policies/guidelines for truck washing, and have produced an instructional video.
MO-Missouri		
MS-Mississippi		
MT-Montana	Tony Strainer	No specific programs or policies. Just a common practice to wash ASAP after a storm or winter event.
NC-North Carolina		
ND-North Dakota	Larry Gangl	No Response

**5. Do you have a program or policies that specify frequent equipment washing?**

NE-Nebraska		
NH-New Hampshire	Caleb Dobbins William Dusavitch	Not specifically but we do have dedicated wash areas and "encourage" washing to prolong life.
NJ-New Jersey		
NM-New Mexico		
NV-Nevada	Wayne Miller	Nothing writing, but we should consider that, as some crews are better than others.
NY-New York	Mike Lashmet	Yes, we wash vehicles after every storm.
OH-Ohio	Scott Lucas Doug Burke	Yes, in our Maintenance Operations Manual, section 900 on Snow and Ice maintenance, sub section 904.5 Post Storm Activities, we state, "Wash your truck." I have attached the Snow and Ice section of the manual.
OK-Oklahoma		
OR-Oregon	Bruce Erickson	Yes, written policy and established procedures.
PA-Pennsylvania		
RI-Rhode Island		
SC-South Carolina		
SD-South Dakota	Daniel Varilek	No Response
TN-Tennessee	Ken Hampton	I have our SOG that specifies end of season cleaning procedures. We follow the same process for the end of an event.
TX-Texas	Brian Dodge	Yes via service advisories and mostly due to intermittent winter weather.
UT-Utah	Ryan Ferrin	No
VA-Virginia	Allen Williams	No. Each area cleans their assigned equipment as they determine individually. Some areas do much better jobs than others.
VT-Vermont	Robert Sylvester	Yes, Equipment is to be Thoroughly washed after every storm by the operator. Inside and out.
WA-Washington	Greg Hanson James Morin	Yes
WI-Wisconsin	James Hughes	Winter service is performed by Counties
WV-West Virginia	Jeff Pifer	Yes.
WY-Wyoming		

	<b>Respondent</b>	<b>6. Do you use Neutralizers, spray-on corrosion inhibitors, or other similar products?</b>
AK- Alaska		
AL-Alabama		
AR-Arkansas		
AZ- Arizona	Mark Trennepohl	NO
CA-California		
CO-Colorado		
CT-Connecticut	John DeCastro	ConnDOT is currently using Salt Away for end of season wash and clean up. All winter maintenance equipment has Fluid Film Applied multiple times during the year
DE-Delaware		
FL-Florida		
GA-Georgia		
HI-Hawaii		
IA-Iowa		
ID-Idaho	Jeff Rados Nestor Fernandez Dennis Jensen	Yes.
IL-Illinois	Frank Sharpe	Some areas use neutralizers in their wash program, and we are evaluating the effectiveness of these for widespread use.
IN-Indiana		
KS-Kansas		
KY-Kentucky	Rick Durham	Romar Nutra Wash and Lubra Seal
LA-Louisiana		
MA-Massachusetts	Paul Brown	Yes we are using a Chloride neutralizer
MD-Maryland	Tim Lawler	We use chloride neutralizers.
ME-Maine	Brian Burnie	Just the Fluid Film mentioned above.
MI-Michigan	Melissa Longworth Scott Ratterree	Yes. Further detail can be provided as need be.
MN-Minnesota	Todd Stevens	Yes, by district preference; products such as Salt-Away.
MO-Missouri		
MS-Mississippi		
MT-Montana	Tony Strainer	We have rust inhibitors in our salt solutions and we do spray our sanders down in the off season with a rust inhibitor.
NC-North Carolina		
ND-North Dakota	Larry Gangl	No Response



**6. Do you use Neutralizers, spray-on corrosion inhibitors, or other similar products?**

NE-Nebraska		
NH-New Hampshire	Caleb Dobbins William Dusavitch	No Neutralizers or inhibitors. We do line the pick-up bodies with spray-on liners.
NJ-New Jersey		
NM-New Mexico		
NV-Nevada	Wayne Miller	Not Department wide, but some crews do use spray on inhibitors on the mild steel portions of the sanders. The Equipment Division tested the same spray on inhibitor to several truck frames as a test, but it was not found effective enough to justify the expense and labor.
NY-New York	Mike Lashmet	no
OH-Ohio	Scott Lucas Doug Burke	Yes, we have used Krown rust control undercoating in some of our districts. They seem to like the product, but it is not a statewide effort. We also use salt neutralizers in our wash bays. A lot of the garages are moving away from using salt neutralizers due to a research project we let. The results showed that most of the salt neutralizers used at standard rates increased corrosion. One of the products test, that we did not have on contract, did reduce corrosion but most of the districts decided to forgo the use since they felt it was not doing that much good. I have attached a link to the final report and fact sheet.
OK-Oklahoma		
OR-Oregon	Bruce Erickson	It is requested by policy.
PA-Pennsylvania		
RI-Rhode Island		
SC-South Carolina		
SD-South Dakota	Daniel Varilek	No Response
TN-Tennessee	Ken Hampton	We use Neutro-Wash, Lubra-Seal and Black-Max from Rhomar Industries.
TX-Texas	Brian Dodge	Yes, encouraged via service advisories.
UT-Utah	Ryan Ferrin	We use the product Lubra Seal, and Nutra Wash
VA-Virginia	Allen Williams	Yes. Many VDOT areas use neutralizers such as Neutro-wash. Spray-on corrosion inhibitors are sometimes tested, but there have not been widespread use.

**6. Do you use Neutralizers, spray-on corrosion inhibitors, or other similar products?**

VT-Vermont	Robert Sylvester	Yes, some portion of the fleet is testing out use of salt neutralizers on a regular bases and during a through spring wash of equipment followed by an application of Fluid film to truck frame after PM has been completed. Some use of Fluid film application to Loader Hydraulic valves where applicable. Spot application of salt neutralizers and corrosion inhibitors on air valves during routine maintenance as well.
WA-Washington	Greg Hanson James Morin	Yes
WI-Wisconsin	James Hughes	Winter service is performed by Counties
WV-West Virginia	Jeff Pifer	Yes.
WY-Wyoming		

	<b>Respondent</b>	<b>7. Are there any other corrosion related programs or products you have implemented?</b>
AK- Alaska		
AL-Alabama		
AR-Arkansas		
AZ- Arizona	Mark Trennepohl	HAVE BEEN BUILDING 3 NEW TRUCK WASH FACILITIES PER YEAR
CA-California		
CO-Colorado		
CT-Connecticut	John DeCastro	Not at this time
DE-Delaware		
FL-Florida		
GA-Georgia		
HI-Hawaii		
IA-Iowa		
ID-Idaho	Jeff Rados Nestor Fernandez Dennis Jensen	We are trying to use Stainless Steel as much as possible on all future spec's.
IL-Illinois	Frank Sharpe	No
IN-Indiana		
KS-Kansas		
KY-Kentucky	Rick Durham	No Response
LA-Louisiana		
MA-Massachusetts	Paul Brown	We use a bed chain lubricants and replace electrical connectors often. Yes Corrosion inhibited MagCl
MD-Maryland	Tim Lawler	While I wouldn't consider it a program, we have analyzed our trucks to determine what practices in specifying can be done to mitigate corrosion. For instance the use of full fenders on rear axles, full fender inserts on front axles, stainless steel moldboards on plows, high efficiency mold4board shapes, moving pre-wet application into tailgate spreaders, requiring single frame rails, aluminum rims etc. are intended to either raise corrosion resistance or prevent the intrusion of corrosive agents into more vulnerable areas of the vehicles.
ME-Maine	Brian Burnie	No Response
MI-Michigan	Melissa Longworth Scott Ratterree	We have two Winter Maintenance Trucks being evaluated with a Nano-Clear application. Plus see #4.
MN-Minnesota	Todd Stevens	One district tried an underbody wash sprayer system

**7. Are there any other corrosion related programs or products you have implemented?**

MO-Missouri		
MS-Mississippi		
MT-Montana	Tony Strainer	no
NC-North Carolina		
ND-North Dakota	Larry Gangl	No Response
NE-Nebraska		
NH-New Hampshire	Caleb Dobbins William Dusavitch	No
NJ-New Jersey		
NM-New Mexico		
NV-Nevada	Wayne Miller	No Response
NY-New York	Mike Lashmet	No, other than corrosion inhibitors in S&I control materials.
OH-Ohio	Scott Lucas Doug Burke	Yes, when buying most of our liquid deicer materials, we stipulate they must be on the Pacific Northwest Snowfighters Quality Products List. This means that all of the products must have a Corrosion Value of at least 70% less than Sodium Chloride.
OK-Oklahoma		
OR-Oregon	Bruce Erickson	No Response
PA-Pennsylvania		
RI-Rhode Island		
SC-South Carolina		
SD-South Dakota	Daniel Varilek	No Response
TN-Tennessee	Ken Hampton	We are in the process of purchasing Mosmatic Hurricane Pro under carriage pressure washers for all wash bays throughout the state to improve removal of salt residue.
TX-Texas	Brian Dodge	No
UT-Utah	Ryan Ferrin	No

**7. Are there any other corrosion related programs or products you have implemented?**

VA-Virginia	Allen Williams	<p>- We have tested NRI-200 on one of our brine application trucks that is manufactured by DeLong Equipment Company. This product is a high solids water based emulsion formulated to adhere to difficult substrates and provide superior corrosion inhibition in harsh storage environments. After this product is applied we encapsulate the metal with a couple of coats of epoxy primer along with two top coats of paint.</p> <p>- We have also tested a "spray in bed liner" material on our tank hold down straps and mounting brackets. This material has held up very well and shows no sign of corrosion. We have also tested the "spray in bed liner" material on the inside floors on a select group of our new wheel loaders to help protect the flooring from salt corrosion that is carried inside the cab on the boots of our operators.</p>
VT-Vermont	Robert Sylvester	Composite lighting has been used in place of aluminum housing lighting for wing, sander, back up and spot lights.
WA-Washington	Greg Hanson James Morin	<p>WSDOT has tracked corrosion related costs since 2008. Mechanics code their work orders when corrosion is the cause of failures or repairs. In 2017 we spent \$418K just on dump truck corrosion related repairs. On average over the last 9 years its worked out to 9% of dump truck repairs (not counting PM) are corrosion related.</p> <ul style="list-style-type: none"> <li>• NEUTRO-WASH salt and chloride neutralizer from RHOMAR</li> <li>• NOCO battery cleaner and corrosion prevention</li> <li>• Densyl Tape</li> <li>• Krown Rust Protection</li> <li>• Fluid Film</li> <li>• LUBRA SEAL spreader chain and box encapsulate</li> <li>• MET CON 3000 clear equipment and cement encapsulate RHOMAR</li> </ul> <p>. All de-icing material applied is treated with a corrosion inhibitor.</p>
WI-Wisconsin	James Hughes	Winter service is performed by Counties
WV-West Virginia	Jeff Pifer	No.
WY-Wyoming		